Epistemology of classification

with emphasis on Durkheim and Mauss

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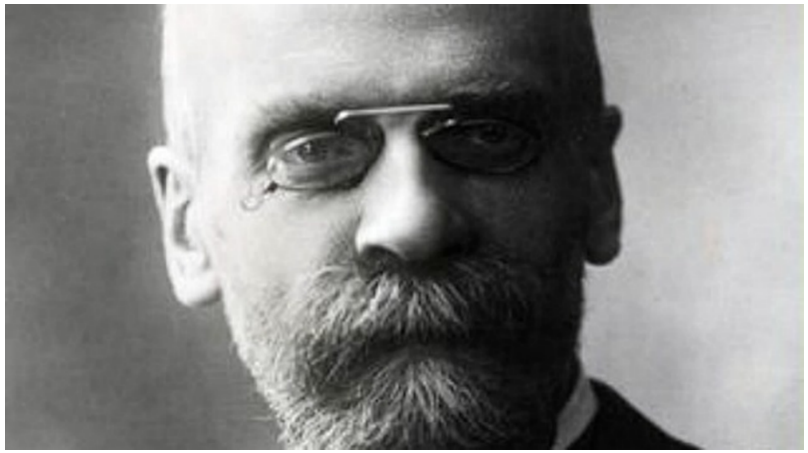
Overview

1. Introduction: French pioneers
2. The epistemology of classification
3. The role of the classifier in theories of classification
4. Criteria for the fruitfulness of classifications
5. Conclusion.

Emile Durkheim and Marcel Mauss



1. Introduction: French pioneers

- Suzanne Briet: Documents and documentation
- Jacques Maniez: Data merging, database semantics and semantic holism
- General philosopher “kings”: Emile Durkheim, Pierre Bourdieu

2.0 The epistemology of classification

- α Rationalism
- β Empiricism
- γ Historicist approaches to classification
- δ Pragmatic and critical approaches to classification.

These approaches are further described in *ISKO Encyclopedia of Knowledge Organization*: http://www.isko.org/cyclo/classification#4.2c

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isko.org/cyclo/classification

Classification

by Birger Hjørland

Table of contents:

Abstract:
This article presents and discusses definitions of the term *classification* and the related concepts *concept*, *categorization*, *ordering*, *taxonomy* and *typology*. It further presents and discusses theories of classification including the influences of Aristotle and Wittgenstein. It presents different views on forming classes, including logical division, numerical taxonomy, historical classification, hermeneutical and pragmatic/critical views. Finally, issues related to artificial versus natural classification and taxonomic monism versus taxonomic pluralism are briefly presented and discussed.

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2.0 The epistemology of classification

Rationalism

Rationalist theories of indexing (such as Ranganathan's theory) suggest that subjects are constructed logically from a fundamental set of categories. The basic method of subject analysis is then "analytic-synthetic", to isolate a set of basic categories (=analysis) and then to construct the subject of any given document by combining those categories according to some rules (=synthesis). The application of rules such as logical division is by principle part of the rationalist view.

2.0 The epistemology of classification

Empiricism

Empiricist theories of indexing are based on the idea that similar (informational) objects share a large number of properties. Objects may be classified according to those properties, but this should be based on neutral criteria, not on the selection of properties from theoretical points of view because this introduces a kind of subjective criteria, which is not approved by empiricism. Numerical statistical procedures are based on empiricist philosophy (Hjørland 2011, 74).

2.0 The epistemology of classification

Historicism (1)

To say that two elements belong to the same class (or "clade") if they share a common ancestor is clearly different from defining membership of a class by similarity (sets of characteristics as arranged by logical division or numerical taxonomy). Today, this is the dominant approach in biological systematics. This approach is based on the historical or evolutionary development of the classified **objects**. It is also used in other fields, for example, for classification of languages and musical instruments — and is one of four general approaches to classification.

2.0 The epistemology of classification

Historicism (2)

There is also a subjective side of classification – and *it is in relation to the social-cultural-historical development of the classifier that Durkheim and Mauss become relevant*.

We shall return to this as the main point in this speech, but first consider the last basic approach, pragmatism.

2.0 The epistemology of classification

Pragmatic and critical approaches to classification

These views are based on considering the

- goals,
- values,
- interests,
- policies, and
- consequences of classification.

From this perspective, a classification can never be neutral, but will always tend to support certain goals and interests at the expense of other interests.

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3.0 The role of the classifier in theories of classification

To ask about the role of the classifier is the same as to ask about the role of subjectivity in classification.

In the positivist tradition, subjectivity is seen as something that should be avoided. There are, for example, studies of inter-indexer consistency (how consistent indexers index or classify the same documents the same way)

An implicit assumption has often been that indexer consistency is a measure of quality. However, as pointed out by Cooper (1969), indexing may be consistently bad.

3.0 The role of the classifier in theories of classification

In the cognitive theory, the subjectivity of the classifier may be understood as being related to universal psychological characteristics of the human mind, an 'universal individual' in the sense of Descartes and Kant.

This view may be termed "psychologism". It has, for example, influenced the classification of colors and color terms. Berlin and Kay (1969) is a very influential book based on this view.

3.0 The role of the classifier in theories of classification

A third group of positions considers subjectivity of classification as culturally, socially and paradigmatic formed.

Nobes and Stadler (2013) examined accounting classifications. They showed how classification can depend on the mindsets of those doing the classifying, the classifiers themselves and the characteristics that they choose can affect classification and how classification can therefore change dramatically over time without the objects changing.

3.0 The role of the classifier in theories of classification

There exist a whole research field, ethnobiology, concerned with how different cultures classify plants and animals (see, for example, Berlin 1992).

(In this field Berlin represents a cognitive orientation whereas other researchers work from cultural-relative assumptions)

3.0 The role of the classifier in theories of classification

In color classification Biggam (2015, 1) wrote:

"When the colour vocabularies of various languages are considered and compared, the researcher finds that there are many different ways in which humans categorize and "label" colours, resulting in an amazing array of misunderstandings. Monoglot individuals invariably believe that their own colour system is clear and obvious, and they are often mystified when confronted with an alternative system.

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3.0 The role of the classifier in theories of classification

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So the first step which the reader has to take when entering the world of colour semantics is probably the most difficult of all; s/he must restrict his or her own colour system to normal, everyday speech and learn to set it aside when considering foreign or historical colour descriptions. The aim is to dispose of any preconceptions about how colour "should" be classified and described, so as to gain insights into the workings of other languages and cultures, and into the nature of colour itself."

3.0 The role of the classifier in theories of classification

Durkheim and Mauss (1903) claimed:

the classification of things reproduces a pattern of social arrangements of the classifiers more than a pattern of the things themselves.

Some serious problems in their view and methodology has been pointed out, e.g. by the English translator Rodney Needham (Durkheim and Mauss 2010) and by Bloor (1982).

However, the basic idea that classifications reflects the societies in which they are produced is an important thesis today.

3.0 The role of the classifier in theories of classification

Bloor (1982, 269) argued that the network theory provides plausibility to the idea of Durkheim and Mauss. The network theory says that knowledge is not built on discrete, self-sufficient facts which maintain their individuality and status in isolation from one another. Rather knowledge is organic, and the organization of the whole takes precedence over the parts, overseeing their adjustment and correction But then Bloor adds the following comment:

"… a classificatory system is not, and cannot be, determined by the way the world is. There is no such thing as a natural or uniquely objective classification".

3.0 The role of the classifier in theories of classification

Bloor's quote may be considered the point of view of social constructivism on classification. The quote also formulates the opposite view: a classificatory system may be determined by the way the world is and should reflect how the world is (a realist view on classification).

At this point it seems important to consider some contemporary scientific classifications. We will briefly consider classification of Planets (and the Pluto case), the DSM classification of mental disorders and a new classification of birds.

3.0 The role of the classifier in theories of classification

Dick (2013) provides a **classification of celestial bodies**, including controversies in defining "planet". He wrote:

"… while discovery is inevitably socially *influenced*, the concept of class and the development of classification systems are socially *determined*, even while grounded in nature if they are indeed natural systems. It is for this reason, as well as the lack of consistent principles for classification in planetary science, that the Pluto debate was so messy and its conclusion so controversial. There was no "right" answer for Pluto…"

3.0 The role of the classifier in theories of classification

The **classification of mental diseases** in the influential DSM (Diagnostic and Statistical Manual of Mental Disorders) from its first edition in 1952 until today seems even more clearly to demonstrate how a "scientific classification" is influenced by different social interests, such as the psychopharmacological industry and homosexual communities (who succeeded in having homosexuality removed as a mental disease in 1973, cf. Drescher, 2015).

3.0 The role of the classifier in theories of classification

Since about 1992 there seems to have been a scientific revolution in **bird classification** (see, e.g. Fjeldså 2013) based on a philosophical change (towards Cladism, historical classification) and better empirical methods, DNA-analysis in particular. The new classification seems much stronger that former ones and it seems difficult to deny that this new classification is determined by the way the world of birds has evolved.

We are now in the difficult territory between forms of realism, social constructivism and related positions.

3.0 The role of the classifier in theories of classification

"… to isolate a certain kind of thing is the same process as classifying individual things. And classification is a matter of sorting things into groups, the members of which are more similar to each other than to items outside the group. However, things are only similar or dissimilar in certain respects [...]. Classifications are not objective divisions, inherent in the nature of things, but are structures we impose upon nature. [...] kinds of things are indeed human creations" (Collin 1993, 29: italics in original).

But Collin disagrees in this constructivist view:

3.0 The role of the classifier in theories of classification

"I believe this reasoning is mistaken. What follows from the premises is a less radical conclusion." Later, he summed up his argument:

… the nominalist argument mistakes a valid anti-essentialist point for an anti-realist one. It is true that there is not, among the true descriptions of a thing, one which is privileged, in the sense that any classification of the thing has to be based upon that particular description. There is no uniquely correct classification of a thing, one that shows what the thing really is, rendering alternative classifications somehow misleading or inappropriate. ….(continues)

3.0 The role of the classifier in theories of classification

(continued)

But it is a mistake to infer from this that things do not in themselves belong to any classifications at all and that things only come to belong to classes when we place them there".

The differences between the social constructivist view (as described by Collin) and Collin's own realist view seems, however, not to be that big. If objects have an unlimited number of properties of things, the properties that are selected for classification is a human choice. That choice must be justified pragmatically by the purpose of the classification.

3.0 The role of the classifier in theories of classification

Therefore, it seems correct that "Classifications are not objective divisions, inherent in the nature of things, but are structures we impose upon nature. [...] kinds of things are indeed human creations".

Still, however, it seems difficult not to accept, for example, the recent classification of birds as not reflecting the way birds has evolved on earth. How do we tackle this problem?

4.0 Criteria for the fruitfulness of classifications

Even if different cultures, societies and domain classify objects differently, their classification does not necessarily provide criteria for how things should be classified.

Classifications are closely related to theories (classifiers are classifying according to their theories of the domain). Contemporary biological classification is for example related to the theory of evolution (and different from, for example, the classification by Carl Linnaeus based on the theory of creation).

4.0 Criteria for the fruitfulness of classifications

Classifications, knowledge and theories are developed to serve human purposes. Some classifications and theories are more fruitful than others.

"The ends of scientific classification are best answered, when the objects are formed into groups respecting which a greater number of general propositions can be made, and those propositions more important, than could be made respecting any other groups into which the same things could be distributed "(Mill, 1872, p. 499).

4.0 Criteria for the fruitfulness of classifications

An ontological theory implies a theory of what entities exist in the world and how they are connected (ontological commitment). But how, then, are the truth or fruitfulness of theories determined?

Materialist and pragmatist metaphysics suggests that our categorizations of the world are practice-laden and they are therefore also, inevitably, value-laden (Philström 2009).

Therefore, even if the new classification of birds is developed from specific social-cultural conditions, it may be the best classification to serve biology as well as society more generally.

4.0 Criteria for the fruitfulness of classifications

Theories are confirmed or disconfirmed by experiments, logical analyses, and, in particular by considering their coherence with other theories and by their pragmatic implications.

According to the principle of fallibilism, theories are never absolutely confirmed. They are relatively confirmed when it seems to be an unfruitful hypothesis to consider them wrong, but such an evaluation is again related to broader cultural contexts.

5.0 Conclusion

We have now considered different positions:

Positivism and näive realism: The world is as we immediately see it. We classify the world as it is.

Cognitivism and psychologism: The way we classify the world is determined by our given universal biological characteristics.

Sociologism: the classification of things reproduces a pattern of social arrangements of the classifiers more than a pattern of the things themselves.

Pragmatic realism: The thing themselves cannot be distinguished from human practices.

5.0 Conclusion

To conclude with another French philosopher king:

> "... the cognitive structures which social agents implement in their practical knowledge of the social world are internalized, 'embodied' social structures". (Bourdieu, 1986, 468).

However, these cognitive structures have status like theories and science, criticism and classification research are engaged in evaluating and developing these cognitive structures – which we are also parts of.

Thanks for your attention!

References

Berlin, Brent. 1992. *Ethnobiological classification: Principles of categorization of plants and animals in traditional societies*. Princeton, NJ: Princeton University Press.

Berlin, Brent and Paul Kay. 1969. *Basic color terms. Their universality and evolution*. Berkeley, CA:
University of California Press.

Biggam, Carole Patricia. 2015. *The semantics of colour: A historical approach*. Cambridge, UK: Cambridge University Press.

Bloor, David. 1982. Durkheim and Mauss Revisited: Classification and the Sociology of Knowledge. *Studies in History and Philosophy of Science* 13, no. 4:267—97.

References

Bourdieu, Pierre. 1986. *Distinction: a social critique of the judgement of taste.* London: Routledge. (Originally published in 1979 by Les Editions de Minuit, Paris, as La Distinction: Critique sociale du jugemmt) https://monoskop.org/images/e/e0/Pierre_Bourdieu_Distinction_A_Social_Critique_of_the_Judgement_of_Taste_1984.pdf

Collin, Finn. 1993. "Social Constructivism without Paradox". *Danish Yearbook of Philosophy* 28: 24-46.

Cooper, William S. 1969. Is interindexer consistency a hobgoblin? *American Documentation* 20, no.3: 268-278.

References

Dick, Steven J. 2013. *Discovery and classification in astronomy: controversy and consensus*. New York: Cambridge University Press.

Drescher, Jack. 2015. "Out of DSM: Depathologizing homosexuality." *Behavioral Sciences* 5, no.4: 565–575.

Durkheim, Émile. 1982. *Rules of Sociological Method*. New York: Free Press.

Durkheim, Émile and Marcel Mauss. 2010. *Primitive Classification*. Translated with and Introduction by Rodney Needham. New York: Routledge. (Translated from the French, *De Quelques Formes Primitives de Classification*, 1903).

References

Ereshefsky, Marc. (2000). *The Poverty of the Linnaean Hierarchy : A Philosophical Study of Biological Taxonomy*. Cambridge: Cambridge University Press.

Fjeldså, Jon. 2013. "Avian classification in flux." In: *Handbook of the birds of the world*, special volume (17): New species and global index. J. del Hoyo, et al. (Eds.). Lynx Edicions, Barcelona, 77-146.

Fuchs, Christian. 2017. *Social Media: A Critical Introduction*. 2nd edition. London: SAGE.

Gnoli, Claudio. 2012. Metadata About What? Distinguishing Between Ontic, Epistemic, and Documental Dimensions in Knowledge Organization. *Knowledge Organization* 39, no. 4: 268-275.

References

Johansson, Veronica. 2012. *A time and place for everything? Social visualization tools and critical literacies*. Borås: Valfrid. https://www.diva-portal.org/smash/get/diva2:877028/FULLTEXT01.pdf

Hacking, Ian. 1983. *Representing and Intervening*. Cambridge: Cambridge University Press.

Hjørland, Birger. 2011. "The importance of theories of knowledge: Indexing and information retrieval as an example". *Journal of the American Society for Information Science and Technology* 62, no. 1: 72-77.

References

Hjørland, Birger. 2017. "Classification." *Knowledge Organization* 44, no. 2: 97-128.

Maniez, Jacques. 1997. Database merging and the compatibility of indexing languages. *Knowledge Organization* 24, no. 4: 213-224. (Translated from the French original in *Documentaliste* 34, no. 4-5, 1997, 212-226)

Mill, John Stuart (1872). *A system of logic*, ratiocinative and inductive: Being a connected view of the principles of evidence and the methods of scientific investigation. In two volumes. 8th ed. London: Longmans, Green, Reader, and Dyer (1st ed. 1843).

Nobes, Christopher and Christian Stadler. 2013. How arbitrary are international accounting classifications? Lessons from centuries of classifying in many disciplines, and experiments with IFRS data. *Accounting Organizations and Society* 38, no. 8: 573-595.

References

Olson, Hope A. 2010. "Social Influences on Classification", In Marcia J. Bates and Mary Niles Maack eds., *Encyclopedia of Library and Information Sciences,* Third Edition. Boca Raton, FL: CRC Press, vol. 6: 4806—4813.

Pihlström, Sami. *Pragmatist Metaphysics: An Essay on the Ethical Grounds of Ontology*. London: Continuum.

Ridi, Riccardo. 2016. "Phenomena or Noumena? Objective and Subjective Aspects in Knowledge Organization*." Knowledge Organization* 43, no. 4: 239-53.

Vicedo, Marga. 2000. Experimentation in Early Genetics: The Implications of the Historical Character of Science for Scientific Realism. In Richard Creath and Jane Maienschein (eds.), *Biology and Epistemology*. Cambridge, UK: Cambridge University Press, 215-243.